AD-A102 790 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 6/2
193158 MLRS, MISSILE NUMBER V-13-001, ROUND NUMBER V-162/AT2-1,--ETC(U)
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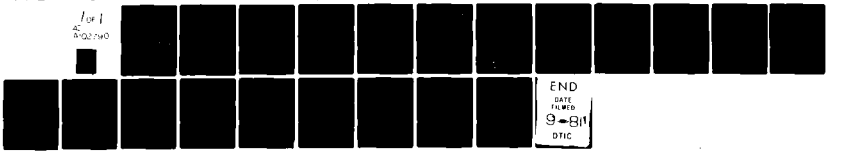

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METEOROLOGICAL DATA REPORT
19315B MLRS
Missile Number V-13-001
Round Number V-162/AT2-1
6 July 1981

by

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Program Support Coordinator
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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM
UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

Meteorological data gathered for the launching of the 19315B MLRS, Missile No. V-13-001, Round No. V-162/AT2-1 presented in tabular form.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

CONTENTS

INTRODUCTION

19315B MLRS, Missile Number V-13-001, Round Number V-162/AT2-1, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1300 MDT, 6 July 1981. The scheduled launch time was 1300 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained in the following methods:

1. Observations:

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}$C), relative humidity, dew point ($^{\circ}$C), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

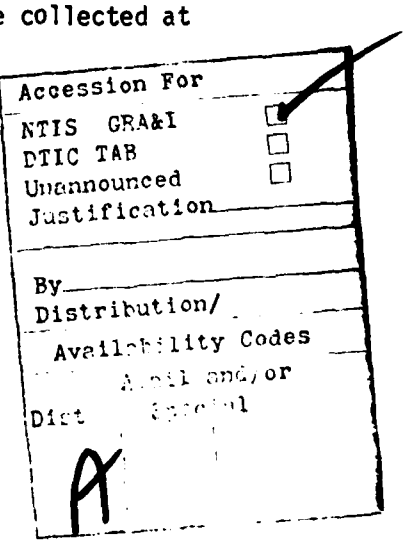
b. Upper Air:

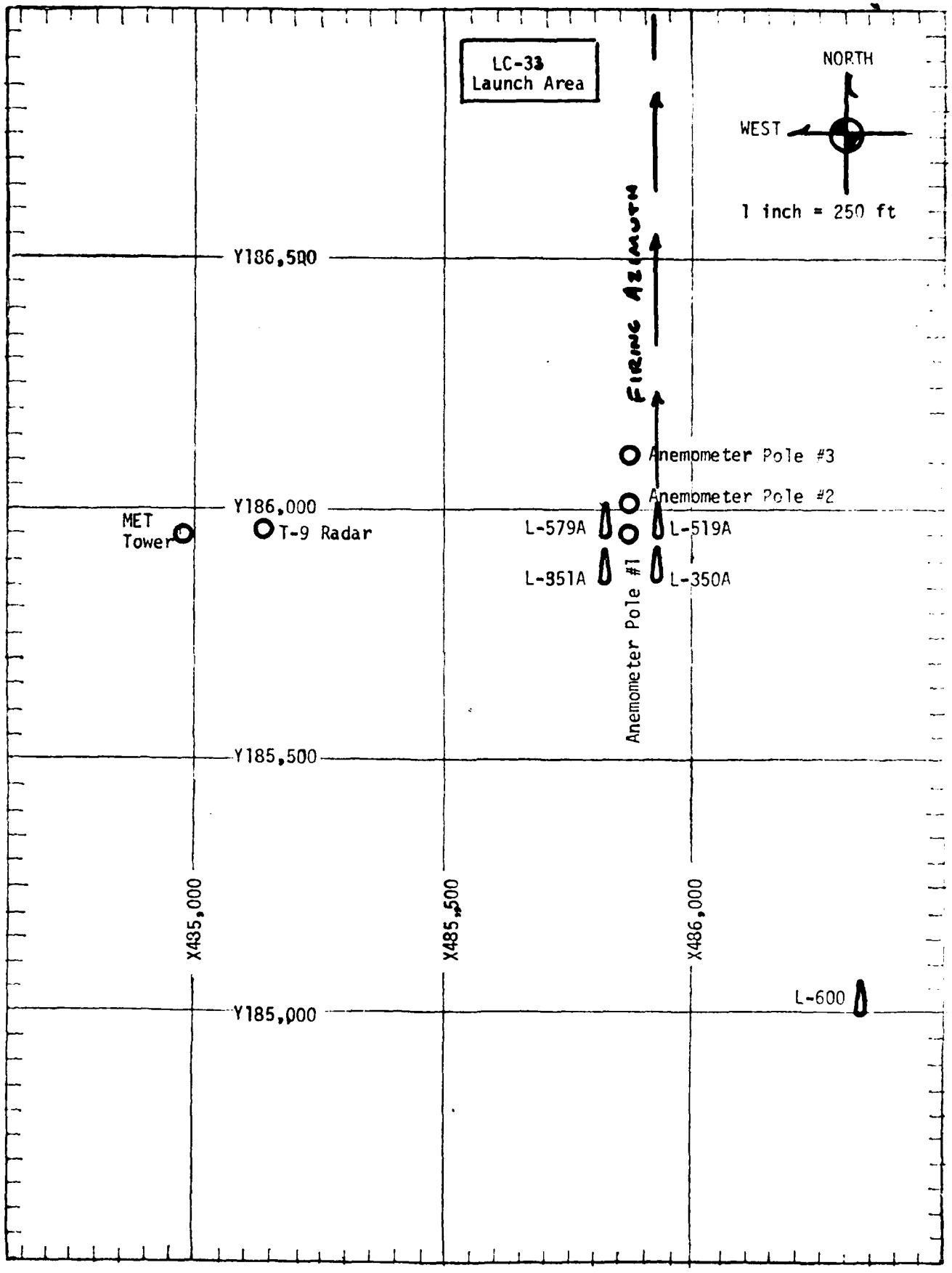
(1) Low level wind data were obtained from RAPTS T-9 pibal observations at:

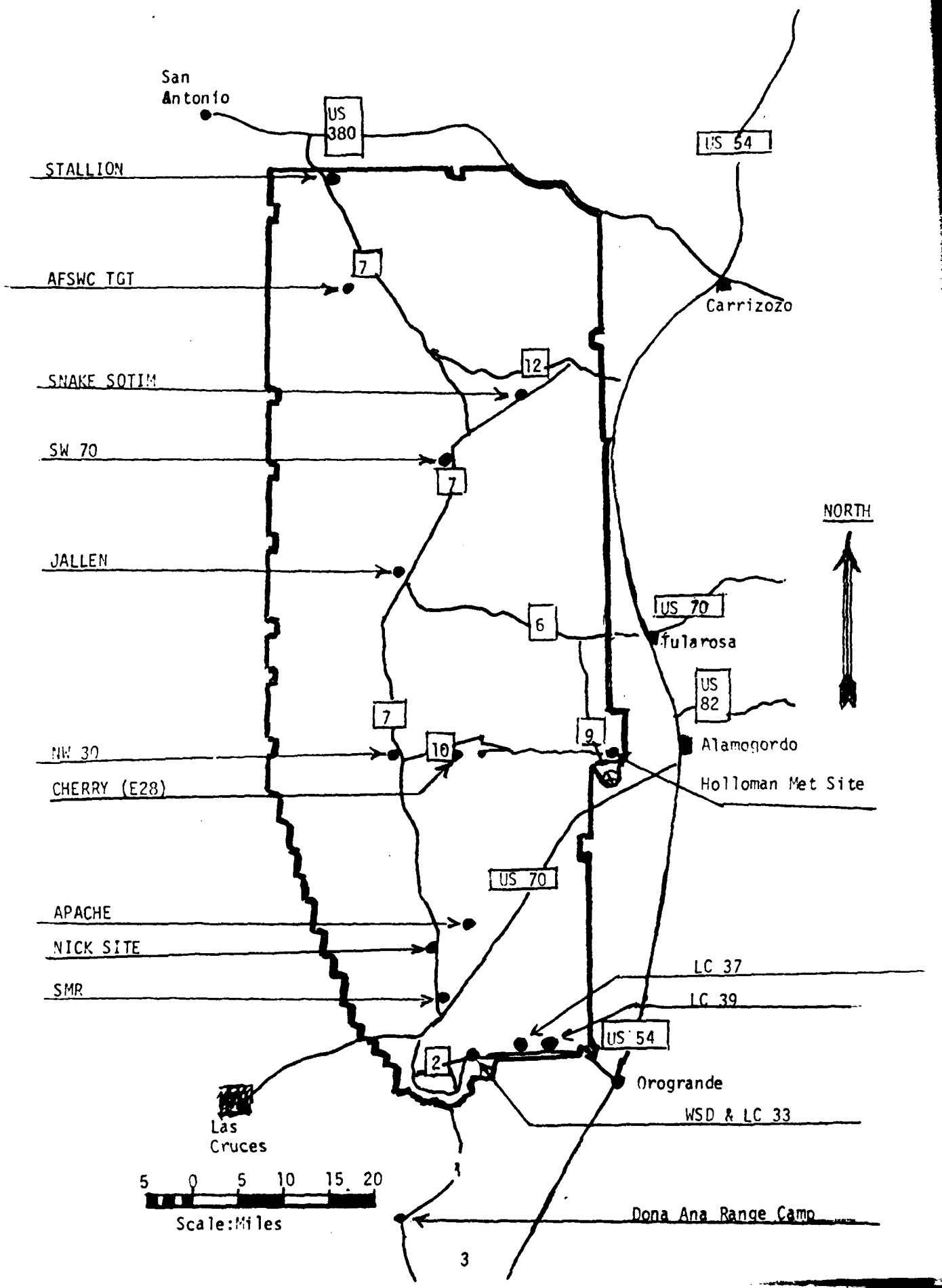
SITE AND ALTITUDE	
LC-33	2 KM
NICK	2 KM

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME	
SMR	1130 MDT
WSD	1215 MDT




LC-33
Launch Area
NORTH
WEST
1 inch = 250 ft
FIRING AZIMUTH
Y186,500
Y186,000
Y185,500
Y185,000
X485,000
X485,500
X486,000
Anemometer Pole #3
Anemometer Pole #2
MET
Tower
T-9 Radar
L-579A
L-519A
L-351A
L-350A
Anemometer Pole #1
L-600


San Antonio
US 380
US 54
STALLION
AFSWC TGT
Carrizozo
SNAKE SOTIM
SW 70
JALLEN
NORTH
US 70
Tularosa
US 82
NW 30
CHERRY (E28)
Alamogordo
Holloman Met Site
US 70
APACHE
NICK SITE
SMR
LC 37
LC 39
US 54
Orogrande
WSD & LC 33
Las Cruces
5 0 5 10 15 20
Scale:Miles
Dona Ana Range Camp
7
12
7
6
7
10
9
2

PROJECT SURFACE OBSERVATION

TABLE 1

STATION LC-33

DATE 06 (DAY) July (MONTH) 1981 (YEAR)

X= 484,982.64 Y= 185,957.73 H=3983.0

TIME M D T	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1300	878.9		32.9		9.6	24	994	C A	L M		50

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS
	4	CU	7000	0	AC	13000				

PSYCHROMETRIC COMPUTATION

TIME: MDT			1300
DRY BULB TEMP.			32.9
WET BULB TEMP.			17.9
WET BULB DEPR.			15.0
DEW POINT			9.6
RELATIVE HUMID.			24%

TABLE 2

T-TIME PILOT-BALLOON MEASURED WIND DATA
DATE 06 July 1981

SITE: LC-33
TIME: 1300 MDT
WSTM COORDINATES:
X= 485,135.76
Y= 185,919.24
H= 3,988.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	C A	L M
150	212	03
210	220	03
270	178	03
330	173	03
390	200	06
500	156	04
650	039	04
800	004	03
950	018	06
1150	029	05
1350	341	07
1550	360	05
1750	002	04
2000	349	04

Data obtained from T-9 radar Tracked Pilot-Balloon Observation.

SITE: NICK
TIME: 1300 MDT
WSTM COORDINATES:
X= 470,734.56
Y= 255,775.64
H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	110	01
150	156	03
210	165	03
270	184	02
330	209	02
390	135	01
500	055	05
650	047	07
800	352	02
950	310	03
1150	294	03
1350	315	03
1550	325	03
1750	333	03
2000	333	03

Data obtained from Single Theodolite Tracked Pilot-Balloon Observation.

TABLE 3

AIMING COMPUTER MET MESSAGES
06 July 1981

SMR 1130 MDT
METCM1325064
061750122879
00160002 30730879
01475001 30530870
02118002 30270845
03427001 29860808
04484004 29360763
05556007 28960719
06056008 28560678
07054009 28120638
08019013 27740601
09059023 27370565
10076026 27050530
11069017 26770498
12062015 26200452

WSD 1215 MDT
METCM1324064
061830122879
00311003 30830879
01305004 30620869
02320002 30340845
03365001 29910808
04264001 29370763
05001003 28980720
06075007 28570678
07034009 28120639
08020014 27680601
09057022 27240565
10075025 26930530
11051018 26730498
12066016 26190452

STATION ALTITUDE 3997.30 FEET MSL
6 JULY 81 1130 HRS MDT
ASCENSION NO. 75

SIGNIFICANT LEVEL DATA
18700b0075
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 4

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
879.3	3997.3	32.8	10.8	26.0
876.4	4094.8	31.3	11.1	29.0
850.0	4991.3	28.5	9.2	30.0
750.2	8567.3	17.5	5.4	45.0
700.0	10499.6	13.5	3.3	50.0
622.4	13705.9	5.1	-2.2	59.0
601.3	14628.9	2.6	.2	84.0
570.4	16028.4	.2	-4.1	73.0
562.0	16419.1	-1.1	-4.6	77.0
545.4	17204.4	-2.5	-12.5	46.0
537.0	17609.3	-2.7	-20.4	24.0
500.0	19460.1	-5.7	-22.1	26.0
400.0	25074.8	-18.6	-33.7	25.0
363.0	27438.3	-22.6	-37.5	24.0
336.4	29264.4	-26.0	-40.5	24.0
300.0	31958.7	-32.4	-46.0	24.0
267.0	34635.8	-37.6	-50.6	24.0
250.0	36122.6	-40.2		
217.8	39179.4	-46.6		
200.0	41030.5	-49.8		
150.0	47058.0	-62.5		
133.4	49421.2	-66.6		
112.2	52876.7	-66.4		
100.0	55157.4	-69.9		
90.0	57242.7	-66.9		
84.2	58567.2	-68.1		
78.6	59940.4	-65.5		
70.0	62274.2	-64.3		
50.0	69175.8	-58.0		
39.8	74007.4	-50.8		
30.0	80133.5	-48.0		
28.6	81176.7	-47.7		
26.4	82940.2	-43.9		
20.0	89149.3	-41.0		
16.8	93076.7	-40.8		

STATION ALTITUDE 3997.30 FEET MSL
6 JULY 81 1130 HRS MDT
ASCENSION NO. 75

UPPER AIR DATA
1870060075
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3997.3	879.3	32.8	10.8	26.0	995.6	683.3	90.0	1.9	1.000274
4000.0	879.2	32.8	10.8	26.1	995.7	683.3	90.0	1.9	1.000274
4500.0	864.4	30.0	10.3	29.5	987.7	680.2	95.8	1.3	1.000272
5000.0	849.7	28.5	9.2	30.0	976.3	678.4	110.8	.8	1.000266
5500.0	835.0	26.9	8.9	32.1	964.4	676.6	166.9	.4	1.000263
6000.0	820.6	25.4	8.5	34.2	952.6	674.9	224.0	.7	1.000260
6500.0	806.4	23.9	8.0	36.3	941.0	673.1	241.2	1.2	1.000256
7000.0	792.4	22.3	7.5	38.4	929.6	671.3	256.7	1.4	1.000252
7500.0	778.7	20.8	6.9	40.5	918.4	669.5	267.8	1.7	1.000248
8000.0	765.2	19.2	6.2	42.6	907.4	667.7	279.5	3.0	1.000244
8500.0	752.0	17.7	5.5	44.7	896.5	665.9	284.4	5.2	1.000240
9000.0	738.7	16.6	5.0	46.1	884.1	664.6	294.8	6.9	1.000236
9500.0	725.5	15.6	4.4	47.4	871.6	663.4	307.0	7.2	1.000232
10000.0	712.6	14.5	3.9	48.7	859.3	662.2	330.1	6.2	1.000228
10500.0	700.0	13.5	3.3	50.0	847.1	661.0	359.8	6.2	1.000224
11000.0	687.3	12.2	2.5	51.4	835.7	659.4	20.6	7.3	1.000220
11500.0	674.8	10.9	1.6	52.8	824.5	657.8	24.3	8.2	1.000216
12000.0	662.6	9.6	.8	54.2	813.4	656.3	26.8	8.8	1.000212
12500.0	650.5	8.3	-.1	55.6	802.5	654.7	27.3	8.8	1.000208
13000.0	638.7	6.9	-1.0	57.0	791.7	653.1	27.9	8.8	1.000204
13500.0	627.1	5.6	-1.9	58.4	781.1	651.5	29.5	9.0	1.000200
14000.0	615.6	4.3	-1.3	67.0	770.3	650.0	27.3	9.4	1.000199
14500.0	604.2	2.9	-.1	80.5	759.4	648.6	16.4	10.4	1.000199
15000.0	592.9	2.0	-.9	81.1	748.1	647.4	12.8	13.5	1.000195
15500.0	581.9	1.1	-2.4	77.2	736.7	646.2	22.7	17.3	1.000190
16000.0	571.0	.2	-4.0	73.2	725.4	645.1	30.0	20.9	1.000185
16500.0	560.3	-1.2	-5.3	73.8	715.8	643.3	36.3	24.1	1.000181
17000.0	549.7	-2.1	-10.2	54.1	705.2	642.0	39.8	25.7	1.000172
17500.0	539.3	-2.6	-17.8	29.9	693.7	641.1	42.3	26.5	1.000162
18000.0	529.0	-3.3	-20.8	24.4	682.4	640.2	42.1	24.9	1.000158
18500.0	518.9	-4.1	-21.2	25.0	671.4	639.2	41.4	22.9	1.000155
19000.0	509.0	-5.0	-21.7	25.5	660.6	638.3	40.3	20.2	1.000153
19500.0	499.2	-5.8	-22.2	26.0	650.0	637.3	38.6	17.7	1.000150
20000.0	489.4	-6.9	-23.2	25.9	640.0	636.9	34.8	15.4	1.000148
20500.0	479.8	-8.1	-24.2	25.8	630.1	636.5	31.0	14.2	1.000145
21000.0	470.3	-9.2	-25.3	25.7	620.4	636.1	29.3	14.1	1.000142
21500.0	461.1	-10.4	-26.3	25.6	611.0	635.7	32.6	14.7	1.000140
22000.0	452.0	-11.5	-27.4	25.5	601.5	635.3	34.9	15.5	1.000138
22500.0	443.1	-12.7	-28.4	25.5	592.3	634.9	37.5	15.7	1.000135
23000.0	434.4	-13.8	-29.4	25.4	583.3	634.5	38.3	16.1	1.000133

STATION ALTITUDE 3997.30 FEET MSL
6 JULY 81 1130 HRS MDT
ASCENSION NO. 75

UPPER AIR DATA
1870060075
S M R

TABLE 5

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	425.8	-15.0	-30.4	25.3	574.4	626.1	43.8	16.6	1.000131
24000.0	417.5	-16.1	-31.4	25.2	565.6	624.7	45.7	17.4	1.000128
24500.0	409.2	-17.3	-32.5	25.1	557.0	623.3	45.7	18.3	1.000126
25000.0	401.2	-18.4	-33.5	25.0	548.5	621.9	43.9	20.4	1.000124
25500.0	393.1	-19.3	-34.4	24.8	539.3	620.8	41.8	23.2	1.000122
26000.0	385.1	-20.2	-35.2	24.6	530.1	619.7	37.7	28.3	1.000120
26500.0	377.3	-21.0	-36.0	24.4	521.1	618.7	34.6	33.9	1.000118
27000.0	369.6	-21.9	-36.8	24.2	512.2	617.6	32.1	38.4	1.000116
27500.0	362.1	-22.7	-37.6	24.0	503.5	616.6	30.2	42.9	1.000114
28000.0	354.6	-23.6	-38.4	24.0	495.0	615.4	29.4	45.8	1.000112
28500.0	347.3	-24.6	-39.2	24.0	486.6	614.3	28.8	48.8	1.000110
29000.0	340.1	-25.5	-40.1	24.0	478.4	613.1	28.8	50.6	1.000108
29500.0	333.0	-26.6	-41.0	24.0	470.4	611.8	28.9	52.2	1.000106
30000.0	326.0	-27.7	-42.0	24.0	462.8	610.3	29.0	52.2	1.000104
30500.0	319.2	-28.9	-43.0	24.0	455.2	608.9	29.2	51.7	1.000102
31000.0	312.5	-30.1	-44.1	24.0	447.9	607.4	29.2	50.7	1.000101
31500.0	305.9	-31.3	-45.1	24.0	440.6	605.9	29.0	49.1	1.000099
32000.0	299.5	-32.5	-46.1	24.0	433.4	604.4	29.1	47.3	1.000097
32500.0	293.0	-33.5	-47.0	24.0	425.8	603.2	30.1	44.9	1.000095
33000.0	286.7	-34.4	-47.8	24.0	418.3	602.0	31.2	42.4	1.000094
33500.0	280.5	-35.4	-48.7	24.0	411.0	600.7	29.9	41.5	1.000092
34000.0	274.5	-36.4	-49.5	24.0	403.8	599.5	28.5	40.7	1.000090
34500.0	268.6	-37.3	-50.4	24.0	396.7	598.3	25.9	41.4	1.000089
35000.0	262.7	-38.2	-57.[illegible]	18.1**	389.6	597.1	22.7	43.3	1.000087
35500.0	257.0	-39.1	-58.[illegible]	10.1**	382.5	596.0	19.9	45.1	1.000085
36000.0	251.4	-40.0	-71.3	2.0**	375.5	594.9	18.1	45.8	1.000084
36500.0	245.8	-41.0			368.8	593.6	16.3	46.5	1.000082
37000.0	240.3	-42.0			362.2	592.3	15.5	46.7	1.000081
37500.0	234.9	-43.1			355.7	590.9	15.4	46.5	1.000079
38000.0	229.7	-44.1			349.4	589.6	15.3	46.2	1.000078
38500.0	224.6	-45.2			343.2	588.2	16.5	46.2	1.000076
39000.0	219.6	-46.2			337.1	586.9	17.7	46.2	1.000075
39500.0	214.6	-47.2			330.8	585.7	18.5	45.0	1.000074
40000.0	209.7	-48.0			324.5	584.5	18.9	43.1	1.000072
40500.0	204.9	-48.9			318.4	583.4	19.2	41.6	1.000071
41000.0	200.3	-49.7			312.3	582.3	19.2	41.0	1.000070
41500.0	195.6	-50.8			306.4	580.9	19.1	40.4	1.000068
42000.0	191.0	-51.8			300.6	579.6	18.7	39.4	1.000067
42500.0	186.5	-52.9			294.9	578.2	18.2	38.5	1.000066
43000.0	182.1	-53.9			289.3	576.8	17.4	36.5	1.000064

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL
6 JULY 81 1130 HRS MDT
ASCENSION NO. 75

UPPER AIR DATA
1870060075
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
43500.0	177.8	-55.0			283.9	575.4	16.6	34.5	1.000063
44000.0	173.6	-56.1			278.5	574.0	15.9	33.2	1.000062
44500.0	169.5	-57.1			273.3	572.6	15.3	32.1	1.000061
45000.0	165.5	-58.2			268.1	571.2	15.0	31.2	1.000060
45500.0	161.6	-59.2			263.1	569.8	15.0	30.4	1.000059
46000.0	157.8	-60.3			258.2	568.4	15.0	29.5	1.000058
46500.0	154.0	-61.3			253.3	567.0	14.9	27.7	1.000056
47000.0	150.4	-62.4			248.6	565.6	14.7	25.9	1.000055
47500.0	146.7	-63.3			243.6	564.4	13.3	23.7	1.000054
48000.0	143.1	-64.1			238.6	563.2	10.7	21.3	1.000053
48500.0	139.6	-65.0			233.7	562.1	9.1	19.2	1.000052
49000.0	136.2	-65.9			228.9	560.9	14.3	18.2	1.000051
49500.0	132.9	-66.6			224.1	559.9	20.0	17.4	1.000050
50000.0	129.6	-66.6			218.5	559.9	28.2	16.5	1.000049
50500.0	126.4	-66.5			213.1	560.0	38.2	15.9	1.000047
51000.0	123.3	-66.5			207.8	560.0	47.7	15.1	1.000046
51500.0	120.2	-66.5			202.6	560.1	56.2	12.0	1.000045
52000.0	117.2	-66.5			197.6	560.1	69.9	9.4	1.000044
52500.0	114.3	-66.4			192.7	560.1	76.6	7.4	1.000043
53000.0	111.5	-66.6			188.1	559.9	76.6	5.5	1.000042
53500.0	108.7	-67.4			184.0	558.9	75.8	3.8	1.000041
54000.0	106.0	-68.1			180.1	557.8	64.6	4.7	1.000040
54500.0	103.4	-68.9			176.3	556.8	57.1	5.6	1.000039
55000.0	100.8	-69.7			172.6	555.7	66.7	6.7	1.000038
55500.0	98.3	-69.4			168.0	556.1	88.9	9.0	1.000037
56000.0	95.8	-68.7			163.3	557.1	101.1	12.0	1.000036
56500.0	93.4	-68.0			158.6	558.0	105.9	13.7	1.000035
57000.0	91.1	-67.2			154.1	559.0	108.8	14.8	1.000034
57500.0	88.8	-67.1			150.2	559.2	111.1	15.8	1.000033
58000.0	86.6	-67.6			146.8	558.6	107.7	16.4	1.000033
58500.0	84.5	-68.0			143.5	557.9	104.5	17.0	1.000032
59000.0	82.4	-67.3			139.4	559.0	101.9	17.7	1.000031
59500.0	80.4	-66.3			135.3	560.3	100.0	18.3	1.000030
60000.0	78.4	-65.5			131.5	561.4	98.4	19.0	1.000029
60500.0	76.4	-65.2			128.1	561.8	103.1	18.1	1.000029
61000.0	74.6	-65.0			124.8	562.1	108.3	17.4	1.000028
61500.0	72.7	-64.7			121.6	562.5	112.9	18.0	1.000027
62000.0	71.0	-64.4			118.4	562.8	115.7	20.2	1.000026
62500.0	69.2	-64.1			115.4	563.3	117.9	22.4	1.000026
63000.0	67.6	-63.6			112.3	563.9	118.6	23.5	1.000025

STATION ALTITUDE 3997.30 FEET MSL
6 JULY 81 1130 HRS MDT
ASCENSION NO. 75

UPPER AIR DATA
1870060075
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
63500.0	65.9	-63.2			109.4	564.5	107.8	24.3	1.000024
64000.0	64.4	-62.7			106.5	565.1	102.5	25.4	1.000024
64500.0	62.8	-62.3			103.7	565.7	97.9	25.6	1.000023
65000.0	61.3	-61.8			101.0	566.3	93.5	25.9	1.000023
65500.0	59.8	-61.4			98.4	567.0	92.1	26.4	1.000022
66000.0	58.4	-60.9			95.8	567.6	95.8	26.8	1.000021
66500.0	57.0	-60.4			93.3	568.2	99.5	27.4	1.000021
67000.0	55.6	-60.0			90.9	568.8	102.0	27.6	1.000020
67500.0	54.3	-59.5			88.5	569.4	103.9	27.4	1.000020
68000.0	52.9	-59.1			86.2	570.0	105.9	27.2	1.000019
68500.0	51.7	-58.6			83.9	570.6	106.9	26.0	1.000019
69000.0	50.4	-58.2			81.7	571.2	107.9	24.7	1.000018
69500.0	49.2	-57.5			79.5	572.1	109.5	23.7	1.000018
70000.0	48.1	-56.8			77.4	573.1	112.2	23.0	1.000017
70500.0	47.0	-56.0			75.4	574.0	115.1	22.4	1.000017
71000.0	45.9	-55.3			73.3	575.0	110.3	22.3	1.000016
71500.0	44.8	-54.5			71.4	576.0	103.4	22.6	1.000016
72000.0	43.8	-53.8			69.5	577.0	97.4	22.6	1.000015
72500.0	42.7	-53.0			67.6	578.0	92.8	21.4	1.000015
73000.0	41.7	-52.3			65.8	579.0	87.6	20.4	1.000015
73500.0	40.8	-51.6			64.1	579.9	84.3	19.7	1.000014
74000.0	39.8	-50.8			62.4	580.9	81.5	19.0	1.000014
74500.0	38.9	-50.6			60.9	581.2	81.2	19.4	1.000014
75000.0	38.0	-50.3			59.4	581.5	87.5	23.0	1.000013
75500.0	37.2	-50.1			58.0	581.8	92.1	26.8	1.000013
76000.0	36.3	-49.9			56.6	582.1	96.2	29.1	1.000013
76500.0	35.5	-49.7			55.3	582.4	99.8	31.2	1.000012
77000.0	34.7	-49.4			54.0	582.7	102.0	32.2	1.000012
77500.0	33.9	-49.2			52.7	583.0	101.8	30.6	1.000012
78000.0	33.1	-49.0			51.4	583.3	101.5	29.1	1.000011
78500.0	32.3	-48.7			50.2	583.6	102.4	29.6	1.000011
79000.0	31.6	-48.5			49.0	583.9	103.5	30.6	1.000011
79500.0	30.9	-48.3			47.9	584.2	103.8	31.7	1.000011
80000.0	30.2	-48.1			46.7	584.5	103.2	33.0	1.000010
80500.0	29.5	-47.9			45.6	584.7	102.5	34.4	1.000010
81000.0	28.8	-47.8			44.6	584.9	103.0	35.0	1.000010
81500.0	28.2	-47.0			43.4	585.9	103.7	35.6	1.000010
82000.0	27.6	-45.9			42.2	587.2	104.1	36.3	1.000009
82500.0	26.9	-44.8			41.1	588.6	104.2	37.2	1.000009
83000.0	26.3	-43.9			40.0	589.9	104.3	38.1	1.000009

STATION ALTITUDE 3997.30 FEET MSL
6 JULY 81 1130 HRS MDT
ASCENSION NO. 75

UPPER AIR DATA
1870060075
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
83500.0	25.7	-43.6			39.1	590.2	105.5	38.4	1.000009
84000.0	25.2	-43.4			38.2	590.5	107.6	38.3	1.000008
84500.0	24.6	-43.2			37.3	590.8	109.7	38.2	1.000008
85000.0	24.1	-42.9			36.4	591.1	112.4	37.2	1.000008
85500.0	23.5	-42.7			35.6	591.4	115.4	36.1	1.000008
86000.0	23.0	-42.5			34.8	591.7	118.6	35.1	1.000008
86500.0	22.5	-42.2			34.0	592.0	116.6	33.0	1.000008
87000.0	22.0	-42.0			33.2	592.3	114.3	30.9	1.000007
87500.0	21.5	-41.8			32.4	592.6	111.7	28.9	1.000007
88000.0	21.1	-41.5			31.7	592.9	108.4	26.9	1.000007
88500.0	20.6	-41.3			30.9	593.2	104.7	25.1	1.000007
89000.0	20.1	-41.1			30.2	593.5	101.2	24.2	1.000007
89500.0	19.7	-41.0			29.5	593.6	98.5	24.3	1.000007
90000.0	19.3	-41.0			28.9	593.6	95.7	24.4	1.000006
90500.0	18.8	-40.9			28.3	593.7	96.4	23.4	1.000006
91000.0	18.4	-40.9			27.6	593.7	98.9	21.9	1.000006
91500.0	18.0	-40.9			27.0	593.7	101.7	20.5	1.000006
92000.0	17.6	-40.9			26.4	593.8			1.000006
92500.0	17.2	-40.8			25.8	593.8			1.000006
93000.0	16.9	-40.8			25.3	593.8			1.000006

STATION ALTITUDE 3997.30 FEET MSL
6 JULY 81 1130 HRS MDT
ASCENSION NO. 75

MANDATORY LEVELS
1870060075
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 6

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4988.	28.5	9.2	30.	110.3	.8
800.0	6738.	23.2	7.8	37.	249.2	1.3
750.0	8567.	17.5	5.4	45.	285.6	5.5
700.0	10489.	13.5	3.3	50.	359.5	6.2
650.0	12520.	8.2	-.1	56.	27.4	8.8
600.0	14669.	2.5	.0	84.	14.9	11.6
550.0	16963.	-2.1	-10.0	55.	39.7	25.7
500.0	19432.	-5.7	-22.1	26.	38.9	17.9
450.0	22111.	-11.8	-27.6	20.	35.6	15.6
400.0	25032.	-18.6	-33.7	25.	43.6	20.8
350.0	28264.	-24.2	-38.9	24.	29.0	47.6
300.0	31894.	-32.4	-46.0	24.	29.0	47.6
250.0	36042.	-40.2			17.7	45.9
200.0	40930.	-49.8			19.2	41.0
175.0	43758.	-55.7			16.1	33.5
150.0	46929.	-62.5			14.7	25.7
125.0	50571.	-66.5			42.2	15.8
100.0	54985.	-69.9			73.8	7.2
80.0	59388.	-66.2			99.8	16.4
70.0	62058.	-64.3			116.8	21.3
60.0	65173.	-61.4			91.1	26.3
50.0	68913.	-58.0			108.2	24.4
40.0	73602.	-51.0			82.3	19.2
30.0	79787.	-48.0			103.0	33.3
25.0	83773.	-43.3			108.1	38.2
20.0	88726.	-41.0			100.6	24.2

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL
6 JULY 81 1215 HRS MDT
ASCENSION NO. 434

SIGNIFICANT LEVEL DATA
1870020434
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 7

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
879.2	3989.0	33.8	9.1	22.0
859.6	4654.2	30.0	11.5	32.0
850.0	4983.1	29.1	11.2	33.0
750.6	8552.5	18.1	5.7	44.0
700.0	10503.3	13.9	3.7	50.0
638.6	13020.7	7.4	-.8	56.0
620.0	13819.0	5.4	-.6	65.0
611.4	14194.3	4.4	.4	75.0
602.6	14582.6	3.4	.1	79.0
550.4	16976.1	-2.9	-4.8	87.0
542.2	17367.2	-3.7	-6.5	69.0
517.0	18603.1	-4.2	-18.8	31.0
500.0	19468.2	-5.4	-19.1	33.0
468.8	21118.9	-9.5	-22.7	33.0
445.2	22426.7	-11.6	-25.3	31.0
400.0	25089.9	-18.7	-31.2	32.0

STATION ALTITUDE 3989.00 FEET MSL
6 JULY 81 1215 HRS MDT
ASCENSION NO. 434

UPPER AIR DATA
18700204
WHITE SANDS
TABLE 8

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	879.2	33.8	9.1	22.0	992.9	684.2	175.0	2.9	1.000268
4000.0	878.9	33.7	9.2	22.2	992.7	684.2	175.0	2.9	1.000268
4500.0	864.1	30.9	11.1	29.7	984.4	681.3	175.1	2.5	1.000274
5000.0	849.5	29.0	11.2	33.1	973.5	679.2	175.2	2.1	1.000272
5500.0	834.8	27.5	10.5	34.6	961.7	677.5	175.3	1.8	1.000268
6000.0	820.4	26.0	9.8	36.1	950.1	675.7	174.0	1.5	1.000263
6500.0	806.2	24.4	9.1	37.7	938.7	673.9	172.2	1.3	1.000259
7000.0	792.3	22.9	8.3	39.2	927.5	672.1	176.9	.9	1.000254
7500.0	778.6	21.3	7.5	40.8	916.4	670.2	196.1	.6	1.000250
8000.0	765.2	19.8	6.6	42.3	905.5	668.4	234.0	.6	1.000245
8500.0	752.0	18.3	5.8	43.8	894.8	666.6	234.1	.6	1.000240
9000.0	738.7	17.1	5.2	45.4	882.4	665.3	308.9	.8	1.000237
9500.0	725.6	16.1	4.7	46.9	870.1	664.0	348.9	2.1	1.000233
10000.0	712.7	15.0	4.2	48.5	857.9	662.7	8.5	3.9	1.000229
10500.0	700.1	13.9	3.7	50.0	846.0	661.5	30.9	5.3	1.000225
11000.0	687.4	12.6	2.8	51.2	834.6	659.9	38.7	6.4	1.000221
11500.0	675.0	11.3	1.9	52.4	823.4	658.4	39.8	6.7	1.000216
12000.0	662.8	10.0	1.1	53.6	812.3	656.8	32.8	6.8	1.000212
12500.0	650.8	8.7	.2	54.8	801.4	655.3	26.1	7.5	1.000208
13000.0	639.1	7.5	-.8	56.0	790.7	653.7	21.0	9.4	1.000204
13500.0	627.4	6.2	-.7	61.4	779.6	652.3	16.3	11.0	1.000202
14000.0	615.8	4.9	-.1	69.8	768.7	650.8	11.4	12.3	1.000201
14500.0	604.5	3.6	.2	78.1	757.9	649.4	11.1	13.7	1.000199
15000.0	593.2	2.3	-.7	80.4	747.4	647.8	14.4	15.1	1.000196
15500.0	582.0	1.0	-1.7	82.1	737.0	646.2	20.1	16.7	1.000191
16000.0	571.1	-.3	-2.7	83.7	726.9	644.5	27.8	19.0	1.000187
16500.0	560.4	-1.6	-3.8	85.4	716.8	642.9	33.1	21.4	1.000183
17000.0	549.9	-2.9	-5.0	85.9	706.9	641.3	36.6	23.9	1.000179
17500.0	539.4	-3.8	-9.4	64.9	696.1	640.1	38.9	25.1	1.000171
18000.0	529.1	-4.0	-12.9	49.5	685.7	639.7	40.7	25.4	1.000164
18500.0	519.1	-4.2	-17.6	34.2	671.5	639.3	39.7	23.5	1.000158
19000.0	509.1	-4.8	-18.9	31.9	660.1	638.6	37.4	20.9	1.000154
19500.0	499.4	-5.5	-19.2	33.0	649.3	637.7	34.0	18.9	1.000152
20000.0	489.7	-6.7	-20.3	33.0	639.7	636.2	29.8	17.1	1.000149
20500.0	480.3	-8.0	-21.4	33.0	630.4	634.7	26.2	16.3	1.000146
21000.0	471.0	-9.2	-22.5	33.0	621.1	633.2	24.9	15.9	1.000144
21500.0	461.8	-10.1	-23.5	32.4	611.1	632.1	26.0	15.7	1.000141
22000.0	452.8	-10.9	-24.4	31.7	601.1	631.1	27.6	15.0	1.000139
22500.0	443.9	-11.8	-25.4	31.0	591.3	630.0	46.7	15.2	1.000136
23000.0	435.1	-13.1	-26.6	31.2	582.5	628.4	47.0	15.9	1.000134

STATION ALTITUDE 3989.00 FEET MSL
6 JULY 81 1215 HRS MDT
ASCENSION NO. 434

UPPER AIR DATA
187002n434
WHITE SANDS

TABLE 8

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	426.4	-14.5	-27.7	31.4	573.9	626.8	46.1	16.6	1.000131
24000.0	417.9	-15.8	-28.8	31.6	565.4	625.1			1.000129
24500.0	409.6	-17.1	-29.9	31.8	557.1	623.5			1.000127
25000.0	401.4	-18.5	-31.0	32.0	548.9	621.9			1.000125

STATION ALTITUDE 3989.00 FEET MSL
6 JULY 81 1145 HRS MDT
ASCENSION NO. 434

MANDATORY LEVELS
1870020434
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 9

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4979.	29.1	11.2	33.	175.2	2.2
800.0	6735.	23.7	8.7	38.	174.0	1.1
750.0	8567.	18.1	5.6	44.	234.0	.6
700.0	10493.	13.9	3.7	50.	30.8	5.3
650.0	12526.	8.7	.1	55.	25.7	7.6
600.0	14680.	3.1	-.1	79.	12.5	14.2
550.0	16973.	-2.9	-4.9	86.	36.5	23.8
500.0	19440.	-5.4	-19.1	33.	34.3	19.1
450.0	22122.	-11.2	-24.7	31.	41.5	14.9
400.0	25047.	-18.7	-31.2	32.